

Applicant: Fourquin et al.
Application No.: 10/802,835

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) An audio device comprising:

~~means for input by the user of said audio device of a receiving unit configured to receive an analog speech signal representing a spoken message,~~
a converter for converting ~~configured to convert~~ ~~said~~the analog speech signal into a digital speech signal comprising at least one ~~speech signal~~ fundamental frequency,

~~means for storing a storage unit configured to store~~ a set of coded data representing a musical score comprising a set of notes, each note being defined by a note fundamental frequency, a duration, and an instrument that plays ~~said~~the note,

~~means for an extracting unit configured to extract~~ a digital music signal from ~~said~~the set of coded data, and

~~means for mixing a mixer configured to combine~~ a first portion of ~~said~~the digital speech signal and a first portion of ~~said~~the digital music signal to produce a ~~digital sung signal~~combined digital signal.

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2. (Currently Amended) The audio device claimed in claim 1 further comprising a digital signal processor comprising ~~said the means for mixing said first portions of said digital speech signal and said digital music signal mixer.~~

3. (Currently Amended) The audio device claimed in claim 1 wherein ~~said the means for mixing said first portions of said digital speech signal and said digital music signal comprise means for replacing mixer is further configured to replace~~ the fundamental frequency of ~~said the~~ speech signal by the fundamental frequency associated with a note of ~~said the~~ music signal.

4. (Currently Amended) The audio device claimed in claim 3 wherein ~~said the~~ fundamental frequency of ~~said the~~ speech signal is replaced by ~~said the~~ fundamental frequency associated with ~~said the~~ note of ~~said the~~ music signal during a period substantially equal to the duration of ~~said the~~ note.

5. (Currently Amended) The audio device claimed in claim 1 further comprising ~~means for adding a signal summing unit configured to add to said the combined digital sung signal a second portion of said the digital speech signal.~~

6. (Currently Amended) The audio device claimed in claim 1 further comprising ~~means for adding a signal summing unit configured to add to said the combined digital sung signal a second portion of said the digital music signal.~~

7. (Currently Amended) The audio device claimed in claim 1 wherein ~~said the means for mixing said first portions of said digital speech signal and said digital music signal comprise means for replacing mixer is further configured to replace at least one harmonic frequency of said the fundamental frequency of said the speech signal with a harmonic frequency of said the fundamental frequency associated with a note of said the musical signal.~~

8. (Currently Amended) The audio device claimed in claim 1 further comprising ~~a discriminator means for discriminating configured to discriminate a consonant from a vowel in said the digital speech signal and adapted to activate said the mixer means for mixing said first portions of said digital speech signal and said digital music signal during the detection of said the vowel.~~

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9. (Currently Amended) The audio device claimed in claim 1 further comprising a voice activity detector configured to control ~~controlling said~~the means for ~~mixing said first portions of said digital speech signal and said digital music signal~~mixer.

10. (Currently Amended) The audio device claimed in claim 1 further comprising a vocoder ~~for coding~~ configured to code ~~said~~the combined sung digital signal.

11. (Currently Amended) A telecommunication terminal comprising:
~~means for input by the user of said audio device of a receiving unit~~
configured to receive an analog speech signal, a converter ~~for converting~~ configured to convert ~~said~~the analog speech signal into a digital speech signal comprising at least one speech fundamental frequency,
~~means for storing a storage unit configured to store~~ a set of coded data representing a musical score comprising a set of notes, each note being defined by a note fundamental frequency, a duration, and an instrument that plays ~~said~~the note,
~~means for an extracting unit configured to extract~~ a digital music signal from ~~said~~the set of coded data, and

~~means for mixing a mixer configured to combine a first portion of saidthe digital speech signal and a first portion of saidthe digital music signal to produce a combined digital sung signal.~~

12. (Currently Amended) The telecommunication terminal claimed in claim 11 further comprising ~~means for transmitting a transmitter configured to transmit saidthe combined digital sung signal to another terminal in real time.~~

13. (Currently Amended) The telecommunication terminal claimed in claim 11 further comprising a digital signal processor comprising ~~saidthe means for mixing said first portions of said digital speech signal and said digital music signal mixer.~~

14. (Currently Amended) The telecommunication terminal claimed in claim 11 wherein ~~saidthe means for mixing said first portions of said digital speech signal and said digital music signal comprise means for replacing mixer is further configured to replace~~ the fundamental frequency of ~~saidthe~~ speech signal by the fundamental frequency associated with a note of ~~saidthe~~ music signal.

15. (Currently Amended) The telecommunication terminal claimed in claim 14 wherein saidthe fundamental frequency of saidthe speech signal is replaced by saidthe fundamental frequency associated with saidthe note of saidthe music signal during a period substantially equal to the duration of saidthe note.

16. (Currently Amended) The audio device claimed in claim 11 further comprising means for adding a signal summing unit configured to add to saidthe combined digital sung signal a second portion of saidthe digital speech signal.

17. (Currently Amended) The audio device claimed in claim 11 further comprising means for adding a signal summing unit configured to add to saidthe combined digital sung signal a second portion of saidthe digital music signal.

18. (Currently Amended) The telecommunication terminal claimed in claim 11 wherein saidthe means for mixing said first portions of said digital speech signal and said digital music signal comprise means for replacing mixer is further configured to replace at least one harmonic frequency of saidthe fundamental frequency of saidthe speech signal with a harmonic frequency of saidthe fundamental frequency associated with a note of saidthe musical signal.

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19. (Currently Amended) The telecommunication terminal claimed in claim 11 further comprising a discriminator means for discriminating configured to discriminate a consonant from a vowel in saidthe digital speech signal and adapted to activate saidthe means for mixing said first portions of said digital speech signal and saiddigital music signal mixer during the detection of saidthe vowel.

20. (Currently Amended) The telecommunication terminal claimed in claim 11 further comprising a voice activity detector controlling configured to control saidthe means for mixing said first portions of said digital speech signal and saiddigital music signal mixer.

21. (Currently Amended) The telecommunication terminal claimed in claim 11 further comprising a vocoder for coding said sung signal configured to code the combined digital signal.